Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Messrs. Scott and Osborne, has made important additions to our knowledge of the Eocene *Vertebrata*.—*E. D. Cope.*

GEOLOGICAL NEWS.—Mr. Hébert has recently published in the *Comptes Rendus* an account of the geology of the British Channel.——The last number of the Palæontographica contains two important memoirs: Roëmer on a Carbonaceous chalk formation of the West Coast of Sumatra; and Branco on the development of the extinct *Cephalopoda*.——M. Filhol having finished his work on the extinct *Vertebrata* of San Gerand le Puy, is about to publish one on those discovered at Ronzon.——The Powell Survey has just published Capt. Dutton's report on the Central Plateaus of the Colorado drainage.

GEOGRAPHY AND TRAVELS.[1]

PROCEEDINGS OF THE GEOGRAPHICAL SECTION OF THE BRITISH ASSOCIATION.—The British Association for the Advancement of Science, held its fiftieth meeting at Swansea from the 25th of August to the 1st of September. The President of the Geographical Section, Lieutenant General Sir J. H. Lefroy, F. R. S., in his opening address, spoke at length on the progress of discovery on our own continent.

In other regions geography was the pioneer of civilization and commerce. Here for the first time she had been outstripped, for the telegraph and the railway had tracked the forest or prairie, and traversed the mountains by paths before unknown to her.

Within living memory no traveler known to fame had crossed the American continent from East to West except Andrew Mackenzie in 1793. No traveler had reached the American Polar sea by land except the same illustrious explorer and Samuel Hearne.

The British Admiralty had not long before instructed Captain Vancouver to search on the coast of the Pacific for some near communication with a river flowing into or out of the Lake of the Woods.

In proceeding to notice the extensive explorations and surveys undertaken by the Government of the United States and of Canada, he alluded to the great aid afforded the former by the physical features of the region of their trigonometrical survey where sharp rocky peaks, bare of vegetation, rise to altitudes of 10,000 to 12,000 feet at convenient distances, in an atmosphere of singular purity; whilst in the British territory a vast region, wholly wanting in conspicuous points, is to be laid out in townships of uniform area. The law required that the eastern and western boundaries of every township be true astronomical meridians, and that the sphericity of the earth's figure be duly allowed for, so that the northern boundary must be less in measurement than the southern. All lines are required to be gone over twice with chains of unequal length, and the land surveyors are checked by astronomical determinations. In carrying out this operation, which will be seen to be one of great nicety, five principal meridians have been vigorously determined, and in part traced—the 97th, 102d, 106th, 110th and 114th; and fourteen base lines connecting them have been measured and marked. One of these, on the parallel of 52° 10′, is one hundred and eigthy-three miles long. The sources of the Frazer river were first reached in February, 1875, and found in a semi-circular basin completely closed in by glaciers and high base peaks at an elevation of 5300 feet. The hardy discoverer, Mr. E. W. Jarvis, traveled in the course of that exploration nine hundred miles on snow shoes, much of it with the thermometer below the temperature of freezing mercury, and lived for the last three days, as he expresses it, "in the anticipation of a meal at the journey's end." We are still imperfectly acquainted with the region north of the parallel of 50° in British Columbia, where the Canadian engineers have long been searching for a practicable railway line from one or other of the three known passes of the Rocky mountains proper through the tremendous gorges of the Cascade mountains to the Pacific. These passes are, the Yellowhead at an elevation of 3645 feet, the Pine river at 2800 feet, and the Peace river said to be only 1650 feet above the sea. The Dominion Government has recently adopted a line from the Yellowhead pass to Burrard inlet, which may be made out on any good map by following the course of the Thompson and Frazer rivers.

---

[1] Edited by ELLIS H. YARNALL, Philadelphia.

Dr. Dawson has recently explored the Queen Charlotte islands. He regards them as a partially submerged mountain chain, a continuation northwestward of that of Vancouver's island, and of the Olympian mountains in Washington territory. An island one hundred and fifty-six miles long and fifty-six wide, enjoying a temperate climate, and covered with forests of timber of some value (chiefly *Abies menziesii*) is not likely to be left to nature much longer.

The Abbé Petitot has recently made some remarkable explorations in the Mackenzie river district, between the Great Slave lake and the Arctic sea. Starting sometimes from St. Joseph's mission station, near Fort Resolution on Great Slave lake; sometimes from St. Theresa on Great Bear lake; sometimes from Notre Dame de Bonne Espérance on the Mackenzie, points many hundreds of miles asunder, he has, on foot or in canoe, often accompanied only by Indians or Esquimaux, again and again traversed that desolate country in every direction. He has passed four winters and a summer on Great Bear lake and explored every part of it. He has navigated the Mackenzie ten times between Great Slave lake and Fort Good Hope, and eight times between the latter post and its mouth. We owe to his visits in 1870 the disentanglement of a confusion which existed between the mouth of the Peel river (R. Plumée), and those of the Mackenzie owing to their uniting in one delta, the explanation of the so-called Esquimaux lake, which, as Richardson conjectured, has no existence, and the delineation of the course of three large rivers which fall into the Polar sea in that neighborhood, the "Anderson" discovered by Mr. Macfarlane in 1859, a river named by himself the Macfarlane, and another he has called the Roncière. Sir John Richardson was aware of the existence of the second of these, and erroneously supposed it to be the "Toothless Fish" river of the Hare Indians (Beg-hui-la on his map). M. Petitot has also traced and sketched in several lakes and chains of lakes, which supports his opinion that this region is partaking of that operation of elevation which extends to Hudson's bay. He found the wild granite basin of one of these lakes dried up and discovered in it, yawning and terrible, the huge funneled opening by which the waters had been drawn into one of the many subterranean channels which the Indians believe to exist here.

These geographical discoveries are but a small part of l'Abbé Petitot's services. His intimate knowledge of the languages of the Northern Indians has enabled him to rectify the names given by previous travelers, and to interpret those descriptive appellations of the natives which are often so full of significance. He has profoundly studied their ethnology and tribal relations, and he has added greatly to our knowledge of the geology of this region.

It is, however, much to be regretted that this excellent traveler was provided with no instruments except a pocket watch and a compass, which latter is a somewhat fallacious guide in a region where the declination varies between 35° and 58°. His method has been to work in the details brought within his personal knowledge or well attested by native information on the basis of Franklin's charts.

M. Petitot expresses his opinion that the district of Mackenzie river can never be colonized—a conclusion no one who has visited it will be disposed to dispute; but he omits to point out that the mouth of that river is about seven hundred miles nearer the post of Victoria, in British Columbia, than the mouth of the Lena is to Yokohama, and far more accessible. It needs no Nordenskiöld to show the way. Its upper waters, the Liard, Peace, Elk and Athabasca rivers, drain an enormous extent of fertile country not without coal or lignite and with petroleum in abundance. As the Canadian geological survey has not yet been extended so far, we are not fully acquainted with its mineral resources; but the speaker adds his testimony to that of more recent travelers as to the remarkable apparent fertility and the exceptional climate of the Peace river valley.

As regards the extent to which the soil is now permanently frozen round the North Pole, Sir Henry Lefroy states that Erman, on theoretical grounds, affirms that the ground at Yakutsk is frozen to a depth of six hundred and thirty feet. At fifty feet below the surface it had a temperature of 28° 5 F. and was barely up to the freezing point at three hundred and eighty-two feet. It is very different on the American continent. The rare opportunity was afforded me by a landslip on a large scale in May, 1844, of observing its entire thickness near Fort Norman, on the Mackenzie river, about two hundred miles further north than Yakutsk, and it was only forty-five feet. At York factory and Hudson's bay it is said to be about twenty-three feet. The recent extension of settlements in Manitoba has led to wells being sunk in many directions, establishing the fact that the permanently frozen stratum does not extend so far as that region, notwithstanding an opinion to the contrary of the late Sir George Simpson. Probably it does not cross Churchill river, for Sir H. Lefroy was assured that there is none at Lake à la Crosse. It depends in some measure on exposure.

In the neighborhood of high river banks, radiating their heat in two directions, and in situations not reached by the sun, the frost runs much deeper than in the open. The question, however, to which Sir John Richardson called attention so long ago as 1839, is well deserving of systematic inquiry, and may even throw some light on the profoundly interesting subject of a geographical change in the position of the earth's axis of rotation.

The Saskatchawan is now navigated from the Grand Rapids, near Lake Winnipeg to the base of the Rocky mountains. The impediments to navigation on the Nelson river have been found to be insuperable, and a company has been formed to make a railway from the lowest navigable point to the mouth of the Churchhill river.

The land around Hudson's bay is rising at the rate of five to ten feet in a century, The mouth of the Churchill affords far superior natural advantages for shipping the agricultural products of the Northwest territory than York Factory.

MICROSCOPY.[1]

The National Societies.—The American Society of Microscopists, held its third annual meeting at Detroit, on the 17th to 19th, of August last, under the presidency of Prof. H. L. Smith, of Geneva, New York. Regular morning and afternoon sessions were held during the three days; and, in all, fourteen papers were read, eight on microscopy proper, and six on natural history subjects connected with the use of the microscope. Included in the latter number is the very elaborate and interesting President's Address, delivered by Prof. Smith, on the subject of Deep Sea Life. A soirée was held in a public hall one evening, which was well attended, and was as fully calculated to accomplish its object of public entertainment and popular instruction in the powers and application of the microscope, as could reasonably be expected

---

[1] This department is edited by Dr. R. H. Ward, Troy, N. Y.